



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 01 2016

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Dr. Jill Lewandowski (VAM-OEP)
U.S. Department of the Interior
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, VA 20166

Dear Dr. Lewandowski:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Bureau of Ocean Energy Management's (BOEM) draft Programmatic Environmental Impact Statement (PEIS) on the Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2017 to 2022 (CEQ No. 20160061). The draft PEIS assesses the potential environmental impacts of a range of program alternatives aimed at establishing a schedule that will be used for considering where and when oil and gas leasing may be appropriate over a five year period. The proposed program contains a proposed lease sale schedule that includes 13 sales in six OCS planning areas. This includes 10 sales in the combined Gulf of Mexico Program Area, and one sale each in the Chukchi Sea, Beaufort Sea, and Cook Inlet Program Areas offshore Alaska. No lease sales are proposed for the Pacific or Atlantic OCS.

The draft PEIS discusses a number of potential environmental impacts. The draft PEIS analyzes the Presidential withdrawal areas (Kaktovik Whaling, Chukchi Sea Corridor, Barrow Whaling and Hanna Shoal) as well as the various exclusion areas and programmatic mitigation. It also includes an analysis of catastrophic discharge events. The document also includes a discussion of the direct Greenhouse Gas (GHG) emissions from the exploration, development and production of O&G on the OCS. We understand that BOEM is considering a revision to its climate change analysis approach, in particular emissions from combustion and other indirect effects, and appreciate BOEM's engagement with EPA on that topic.

We are enclosing technical comments that provide recommendations for further clarification in the final PEIS. We appreciate your agreement to our supplementing these comments, pending our further conversations concerning appropriate consideration of climate change, and we will be providing the required rating at that time. We appreciate the opportunity to review the draft PEIS and look forward to reviewing the final PEIS related to this project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Shari Wilson", is written over the word "Sincerely,".

Shari Wilson
Acting Director
Office of Federal Activities

Enclosure

U.S. Environmental Protection Agency
Detailed Comments
Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2017 to 2022 Draft PEIS

EPA offers the following editorial comments.

Incorrect, should be fixed:

- Page 4-4, Line 10-11: Incorrect description. The correct sentence should be: One ton of CH₄ is estimated to have the same warming potential as 25 tons of CO₂, and for N₂O, 298 tons. (The original used “molecules” rather than “tons”).
- Page 4-96, Line 3: The reference to tables (Tables 9.1-1, 9.1-2, 9.2-1 and 9.3-1) do not correspond to the tables listed in Appendix C. Please correct.
- Page C-17: Line 20/Line 29: Duplicate paragraph, delete redundant one.
- Page C-18, Lines, 7, 10, Page C-21, Line 10: Celsius to Fahrenheit conversion done incorrectly: a change of 1.1 degrees C is a change of 2 degrees F, not 34 degrees F.

Editorial, optional:

- Page xiii, Line 11: change 2012 to **2022**. Line 42: recommend adding 40 CFR parts 1500-**1508**.
- Page 3-7, Line 35: Please clarify if plans exist to utilize infrastructure in the community of Wainwright for Chukchi development.
- Page 4-3, Line 27: delete “also known as natural gas”.
- Page 4-3, Line 34: CH₄ is emitted (in relatively small quantities) from combustion of fossil fuels. In addition, because CH₄ is emitted from combustion, and from venting/leaks/flaring at offshore platforms, EPA suggests changing the sentences here, see below.

The Proposed Action will increase global GHG emissions of CO₂ and N₂O, along with black carbon, as a result of the use of vessels, drilling equipment, and other activities that burn fossil fuels. ~~CH₄, unlike other climate forcers, is not introduced through combustion of fossil fuels. Instead CH₄ is removed from the well and brought onto OCS facilities along with oil being produced.~~ **Methane is also released, as a fugitive, (so-called because it can escape unintentionally from leaks in equipment used by operators), through venting, and through incomplete combustion.** Operators have three different methods of handling natural gas removed from a well:

- (1) Produce and sell the natural gas, provided there is a sufficient quantity, favorable market conditions, and infrastructure (e.g., natural gas pipelines) to justify production;
- (2) Venting or deliberately releasing methane into the atmosphere; and
- (3) Flaring, which is relatively rare on the OCS, involves burning methane, converting it to CO₂ and water, and in some cases, releasing N₂O and black carbon.

~~Methane is also released as a fugitive, so-called because it can escape unintentionally from leaks in equipment used by operators.~~ BOEM is preparing a study to research the contribution of fugitives to overall emissions, including those contributing to climate change.

- Page 4-6, Line 7: The statement is “climate change is expected to increase the amount of vegetation”. Instead, EPA recommends stating “CO₂ fertilization is expected to increase the amount of vegetation” – because climate change has mixed effects depending on location.
- Page B-19/B-24/etc.: For various regions, climate change is listed as leading to an “increase in precipitation rate”. Instead, EPA recommends, “change in precipitation rate” as in some regions, there will be a decrease.
- Page C-19, Line 18-19: 0.6 m (2 ft) by 2100 is actually a conservative estimate of future sea level rise, and so the phrase “Predictions in SLR are as much as 0.6m” would be misleading: later in the chapter,

several other numbers are presented that better represent the projected range (e.g., 0.3 to 1.2 m in Table C-1).

Quantification of CH₄

On the quantification piece, EPA was unable to find information on how the emissions were quantified.

For comparison the annual emissions from offshore oil and gas wells (from the U.S. GHG inventory) are around 8.5 million metric tons CO₂e of methane. In the tables on page 4-5, it appears that the total methane emissions from the population assessed is around 10 million metric tons CO₂e of methane, cumulative over 40 years. EPA was not sure how to compare these, because we are not sure what fraction of the national population is included in the table. For clarification, EPA suggests BOEM include answers to the following questions:

- How many platforms were included?
- Were GOADS data used?
- How were GWPs applied? Chapter 4 suggested that it may have been on a per molecule basis and not a per ton basis which would be incorrect.